UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 16, 2018

Mike Werner
Bureau of Land Management
One North Central Avenue, Suite 800
Phoenix, Arizona 85004

Subject: Ray Land Exchange Draft Supplemental Environmental Impact Statement (DSEIS)/Plan Amendment, Arizona (EIS No. 20170226)

Dear Mr. Werner:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality's NEPA Implementation Regulations (40 CFR 1500-1508) and our review authority under Section 309 of the Clean Air Act.

The DSEIS supplements information in the original 1999 EIS to compare the potential impacts of mining on BLM-managed lands under a BLM mine plan of operations (MPO) versus on private lands owned by ASARCO LLC. Three land exchange alternatives, in addition to the No Action (i.e., no land exchange) alternative are evaluated. We have rated each of the land exchange alternatives as Environmental Concerns – Insufficient Information (EC-2) (see the enclosed "Summary of EPA Rating Definitions"). EPA has serious concerns that, if the Copper Butte, Chilito or Buckeye deposits are mined, their post-closure pit lakes would be contaminated and pose risks to wildlife. Early, fully informed planning and adequate financial assurance to cover the true and full life-cycle costs of mine management are critical to effectively protect environmental resources from significant and long-term degradation.

We understand that, under the No Action alternative, no lands would be exchanged and future mining activities on BLM lands would be subject to MPO requirements, which would be analyzed in one or more EISs. BLM has the authority to require, prior to approving an MPO, geochemical modeling and ecological risk analysis of the future pit lake, implementation of appropriate design and mitigation measures, and adequate financial assurances to ensure that such risks are avoided. Because approval of an Aquifer Protection Permit (APP) by the State of Arizona does not require up-front plans or financial assurance to prevent long-term post-closure environmental risks, we are concerned that an APP issued under any of the land exchange alternatives would not include such critical assurances. We recommend that, for any land exchange alternative that may be selected, BLM work with the State of Arizona and ASARCO to develop provisions to ensure that mining permits include up-front plans and adequate financial assurances to cover the true and full life-cycle costs of mine management.

The DSEIS (p. 152) states that, if the land exchange were to occur, BLM would have the opportunity to apply suggested mitigation and monitoring during the land exchange process; however, it does not identify any suggested mitigation or monitoring measures for the land exchange alternatives. Identification and discussion of mitigation measures are important in assessing the environmental impacts associated with each alternative. Please see the enclosed detailed comments for further discussion of EPA's concerns and recommendations for the Final Supplemental Environmental Impact Statement (FSEIS).

EPA appreciates the opportunity to review this DSEIS. When the FSEIS is released for public review, please send one copy to the address above (mail code: ENF-4-2). If you have any questions, please contact me at (415) 972-3521, or contact Jeanne Geselbracht, the lead reviewer for this project, at 415-972-3853 or geselbracht.jeanne@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosures: Summary of EPA Rating Definitions
EPA's Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment.

EPA DETAILED COMMENTS ON THE RAY LAND EXCHNGE DRAFT SUPPLEMENTAL EIS/PLAN AMENDMENT, ARIZONA – FEBRUARY 16, 2018

Alternatives

The original Draft Environmental Impact Statement (pp. 4-38, 39) indicated that ASARCO intends a specific production rate at Copper Butte over a nine-year period, although it remains unclear what that production rate would be. ASARCO's intentions for the Chilito and Buckeye deposits are even less defined. Information on foreseeable mine life and production rates for the Copper Butte, Chilito and Buckeye deposits is needed to evaluate potential impacts, including groundwater/surface water impacts from pit dewatering and pit lake development, air emissions, and degradation of habitat and biological resources.

> **Recommendation:** In the Final Supplemental Environmental Impact Statement (FSEIS), discuss the foreseeable mining activities at the future Copper Butte, Chilito and Buckeye mines, including anticipated duration, production rates, and potential pit depths; describe the geochemistry and hydrogeology of these areas; and apply this information in analyzing resource impacts among all the alternatives, including the No Action alternative.

The concept of and need for "buffer" areas, as described on page 36 of the Draft Supplemental Environmental Impact Statement (DSEIS), is not clear. For example, it is unclear what CB-2 and RM-18 would buffer, or why they would be included in a future mine plan of operations (MPO) if no mining activities would occur on these parcels. In addition, ASARCO has sold the Casa Grande surface estate and, according to the SDEIS (p. 35), has no foreseeable plans for use of these parcels; therefore, it is unclear whether these parcels would remain part of this land exchange.

> **Recommendation:** In the FSEIS, clarify the need for, and proposed use of, buffer real estate and the Casa Grande mineral estate; distinguish how these lands would be managed under private ownership versus public ownership; and indicate whether they would remain included in this land exchange.

Water Resources

Based on conditions at the Ray Mine, it is highly likely that the post-mining Ray pit lake will be acidic and have high concentrations of several metals, radionuclides and other contaminants, and that birds and other wildlife will have access to it. Active post-closure water management and monitoring is likely to be needed at the Ray Mine for hundreds or thousands of years; however, we are unaware of any geochemical analysis to predict water quality or ecological risk posed by the future Ray pit lake, or any plan or long-term financial assurance established to ensure implementation of measures to prevent such risks into perpetuity. EPA has serious concerns that, if the Copper Butte, Chilito or Buckeye deposits are mined, their post-closure pit lakes would also be contaminated and pose long term risks to wildlife.

The DSEIS (pp. 14-15) states that the Arizona Department of Environmental Quality ensures no degradation of the state's groundwater by implementing the performance standards outlined by its Best Available Demonstrated Control Technology (BADCT), and the Office of the Arizona State Mine Inspector ensures safe and environmentally sound reclamation of mined lands. Arizona BADCT allows for mine pits to serve as passive containment capture zones for mine influenced waters, such as pregnant

leach solution, tailings seepage, and acidic waste rock and wall rock drainage. The State does not require, as a pre-requisite of the Aquifer Protection Permit (APP), an up-front analysis to predict post-closure pit lake water quality or wildlife risk, any plan to prevent such risks, nor long-term financial assurance to ensure environmental protections as long as may be needed. Because approval of an APP does not require up-front plans or financial assurance to prevent long-term post-closure environmental risks, it is anticipated that an APP issued under any of the land exchange alternatives would not include such assurances.

In contrast, BLM has authority to require mine operators on federally managed lands to establish a trust fund or other funding mechanism to ensure long-term treatment to achieve water quality standards and for other long-term, post-mining maintenance requirements, pursuant to 43 CFR 3809.552(c). Such funding must be adequate to provide for construction, long-term operation, maintenance, or replacement of any treatment facilities and infrastructure, for as long as the treatment and facilities are needed after mine closure. Under the No Action alternative, BLM would also have the authority to require, *prior* to approving an MPO, geochemical modeling and ecological risk analysis of the future pit lake, implementation of appropriate design and mitigation measures, and adequate financial assurances to ensure that such risks are avoided.

While BLM's hardrock mining regulations at 43 CFR 3809.555 do not allow closure and reclamation bonds to be backed by corporate guarantees, the State of Arizona does allow corporate guarantees pursuant to a financial test. Asarco's closure and reclamation liabilities at its Arizona mines are currently backed by corporate guarantees in an amount which EPA estimates is far too low to cover the measures we expect will be necessary to protect environmental resources when those facilities close. Under the land exchange alternatives, financial assurance for future mining authorized by the State of Arizona could be in the form of corporate guarantees, but under an MPO, BLM would not accept corporate guarantees.

Early, fully informed planning and adequate financial assurance to cover the true and full life-cycle costs of mine management are critical to effectively protect environmental resources from significant and long-term degradation. It is important to secure highly reliable closure and post-closure financial mechanisms at the inception of a mine project so that its availability is not dependent upon the solvency of the operator. Such assurances can make the difference between the project being sufficiently managed over the long-term by the site operator, versus an unfunded or under-funded contaminated site that becomes a liability for taxpayers, e.g., under the Comprehensive Environmental Response, Compensation, and Liability Act.

Recommendations: For any alternative that may be selected, we urge BLM to work closely with the State of Arizona and ASARCO to develop provisions to ensure that mining permits include up-front plans and adequate financial assurances to cover the true and full life-cycle costs of mine management.

In the FSEIS:

- Discuss the potential geochemistry and ecological risks of the foreseeable future pit lakes under both the APP-only and the MPO/APP scenarios; identify mitigation measures that would avoid potential risks, and describe their anticipated effectiveness. Consider conferring

with your BLM Nevada colleagues regarding helpful guidelines they use in geochemical, hydrogeologic and ecological risk characterization and prediction for pit lakes.

- Discuss the foreseeable pit lakes in the context of their geochemistry and hydrogeology associated with full passive containment or any groundwater flow through for the long-term post-closure period (at least hundreds of years), and identify mitigation that may be needed to avoid or control any impacts to groundwater or surface water quality or quantity in the vicinity.
- Expand the discussion on page 89 and in Table B-2, p. 15 of 18 to explain the differences between the BLM and State of Arizona financial assurance regulations, including how they could affect the potential long-term impacts to, and management of, water and ecological resources at the Ray Mine and foreseeable future Copper Butte, Chilito and Buckeye mines.

According to the DSEIS (p. 153), the Chilito and Copper Butte deposits would need to be dewatered for foreseeable mining activities; however, the potential impacts that would result from dewatering these deposits are not discussed in Section 4.3. Fig. 4.3-1 only depicts drawdown in the alluvial aquifer affected by the Hayden wellfield, and does not describe this aquifer or its connection to other groundwater in the area.

Recommendation: Provide further discussion, maps and cross-sections in the SFEIS to describe and depict the hydrogeology, dewatering and post-mining groundwater recovery at the existing mine and the future Copper Butte, Chilito and Buckeye mines. Include potential groundwater pumping rates; potential impacts to groundwater, surface water and habitat resources from groundwater drawdown; and post-mining recovery rates, groundwater flow patterns, and groundwater/surface water interactions. Describe how impacts would be managed and mitigated under each alternative.

The DSEIS (pp. 63-64) describes existing water quality on the Selected Lands. Some of this information is outdated or incorrect.

Recommendations: In preparing the FSEIS, please note the following:

- The most recent year for Arizona's 303(d) impaired waters listings is 2016, rather than 2010.
- It is incorrect to characterize the Middle Gila stretch as attaining water quality standards for the designated uses. The 2010 and 2016 impaired waters lists identify this segment of the Gila River as "Inconclusive" for fish consumption, full body contact, agricultural irrigation, and agricultural livestock watering.
- The Mineral Creek Diversion Tunnel was constructed to isolate Mineral Creek from the mine. NPDES permit #AZ0000035, issued to the ASARCO Ray facility, allows for the discharge of groundwater from the diversion tunnel (Outfall 011). Stormwater potentially impacted by mining activities is collected for reuse in mining processes. Past monitoring data show exceedances for copper, lead, and zinc at Outfall 003 (as of 2015 no longer a NPDES permitted outfall) and exceedances for selenium and copper at Outfall 011 (ADEQ 2014a).
- Walnut Creek is not currently identified as ephemeral by the Arizona Department of Environmental Quality. Its designated uses are aquatic and wildlife warm water, fish consumption, full body contact, and agricultural livestock.

Air Resources

Most of the selected lands are located within PM10 (particulate matter smaller than 10 microns), lead (Pb) and/or sulfur dioxide (SO_2) non-attainment areas. Table 3.4-2 in the DSEIS summarizes ambient concentrations of PM10 and SO_2 from the ADEQ Hayden Old Jail monitor, which is approximately 16 miles from the Ray Mine and may not accurately represent ambient PM10 and SO_2 concentrations at the Ray Mine. EPA is concerned that, if the Copper Butte, Chilito and Buckeye deposits are mined while the Ray Mine and Hayden facilities are still operating (i.e., the next 50 years or more), their emissions would be additive to the emissions from these ongoing operations. It is unclear in Section 3.4 of the DSEIS whether, under an MPO, BLM would need to conduct a general conformity determination and how such a determination could affect a decision whether to approve an MPO.

Recommendations: In the FSEIS:

- Provide information regarding the general conformity requirements and how these could affect an MPO. The general conformity *de minimis* thresholds for PM10, lead and SO_2 are 100 tons/year, 100 tons/year and 25 tons/year, respectively.
- On page 82, Table 3.4-2, revise the Sulfur Dioxide concentrations to parts per billion rather than parts per million.
- On page 87, Revise bullet 3 to say: "Arizona SIP Revision (ADEQ 2012d) under CAA Section 110(a)(1) and (2): Implementation of 2008 Pb NAAQS (final submitted date October 14, 2011 – Approved, 80 FR 47859, August 10, 2015). The Arizona SIP Revision for the implementation of the 2008 Pb NAAQS was submitted in response to the promulgation of the 2008 revisions to the Pb NAAQS by EPA. New or existing copper mining operations would need to ensure compliance with this plan in the event that it is finalized."
- On page 87, add the following bullets to this section:
  - Arizona SIP Revision: Hayden Sulfur Dioxide Nonattainment Area for the 2010 SO2 NAAQS, March 9, 2017.
  - Arizona Infrastructure SIP Revisions for 1997 PM2.5, 2006 PM2.5 and 2008 Ozone, approved on 11/5/2012, 77 FR 66398. The interstate transport requirement of the infrastructure SIP Revisions for the 2008 ozone NAAQS were approved on May 19, 2016, 81 FR 31513.

Habitat and Special Status Species

Under any of the alternatives, springs and riparian habitat could be affected by groundwater drawdown from mining activities. The DSEIS discloses that habitat for several BLM sensitive species could also be adversely affected by foreseeable mining uses and would not be protected if the land is transferred to ASARCO ownership (DSEIS, p. 146). In addition, bighorn sheep reintroduced into the Box Canyon area have moved into the Copper Butte/Buckeye area within the subject lands, and mining activities on the CB parcels would result in the loss of bighorn sheep habitat and habitat fragmentation (DSEIS, p. 143). The DSEIS does not identify mitigation measures that could be implemented to offset any of these impacts under any of the land exchange alternatives or an MPO.

Recommendation: In the FSEIS, estimate the acreages of sensitive species habitat that would be gained and lost by BLM under each alternative; confer with federal and state wildlife agencies, as appropriate, to identify mitigation measures that could be applied to avoid or offset impacts and describe their effectiveness; and specify any ASARCO-committed measures among them.

Cumulative Impacts

App. D, p. D-1, par. 3: We recommend disclosing that RM-18 (Hackberry Gulch) is being analyzed as a practicable alternative in the forthcoming Ray Tailings Final EIS, and that it is currently unknown which of the Ray Tailings alternatives may be determined to be the least environmentally damaging practicable alternative to meet the purpose of that project. In addition, we recommend that Figures 2.1-1 and 2.2-1 include the site of the proposed Ray Tailings facility in Ripsey Wash.

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